

Claims:

1. Method of obtaining ^{68}Ga by contacting the eluate from a $^{68}\text{Ge}/^{68}\text{Ga}$ generator with an anion exchanger comprising HCO_3^- as counterions and eluting ^{68}Ga from said anion exchanger.
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2. Method according to claim 1 wherein the $^{68}\text{Ge}/^{68}\text{Ga}$ generator comprises a column comprising titanium dioxide.
- 10 3. Method according to claim 1 wherein 0.05 to 5 M HCl is used to elute ^{68}Ga from the $^{68}\text{Ge}/^{68}\text{Ga}$ generator.
4. Method according to claim 2 wherein 0.05 to 0.1 M HCl is used to elute ^{68}Ga from the $^{68}\text{Ge}/^{68}\text{Ga}$ generator.
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5. Method according to claims 1 to 4 wherein water is used to elute ^{68}Ga from the anion exchanger.
6. Method according to claims 1 to 5 wherein the anion exchanger is a strong anion
20 exchanger comprising quaternary amine functional groups.
7. Method according to claims 1 to 6 wherein the anion exchanger is a strong anion exchange resin based on polystyrene-divinylbenzene.
- 25 8. Method of producing a ^{68}Ga -radiolabelled complex by reacting ^{68}Ga obtained by the method according to claims 1 to 7 with a chelating agent.
9. Method according to claim 8 wherein the chelating agent is a macrocyclic chelating agent.
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10. Method according to claims 8 to 9 wherein the chelating agent comprises hard donor atoms, preferably O and N.

11. Method according to claims 8 to 10 wherein the chelating agent is a bifunctional chelating agent
12. Method according to claim 11 wherein the chelating agent is a bifunctional chelating agent comprising a targeting vector selected from the group consisting of proteins, glycoproteins, lipoproteins, polypeptides, glycopolypeptides, lipopolypeptides, peptides, glycopeptides, lipopeptides, carbohydrates, nucleic acids, oligonucleotides or a part, a fragment, a derivative or a complex of the aforesaid compounds and small organic molecules.
13. Method according to claims 8 to 12 wherein the reaction is carried out using microwave activation.
14. Method according to claims 8 to 13 for the production of ^{68}Ga -radiolabelled PET tracers.
15. Kit for the preparation of ^{68}Ga from a $^{68}\text{Ge}/^{68}\text{Ga}$ generator, which comprises a generator column and a second column that comprises an anion exchanger comprising HCO_3^- as counterions.
16. Kit according to claim 15 further comprising means to couple the columns in series.
17. Kit according to claims 15 to 16 further comprising aqueous HCl to elute the ^{68}Ga from the generator column and/or water to elute the ^{68}Ga from the anion exchanger column, preferably, the HCl and the water being aseptically and in a hermetically sealed container.
18. Kit according to claims 15 to 17 further comprising a chelating agent, preferably a bifunctional chelating agent.
19. Use of a kit according to claim 18 for the production of ^{68}Ga -radiolabelled PET tracers.